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Journal of the Amateur Photographic Society of Madras.

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EDITORIAL NOTES.

THE September number of our Calcutta contemporary has, for its frontispiece, a splendid portrait of H. E. Lady Curzon, of Kedlestone. It is the best portrait of Her Excellency which we have seen.

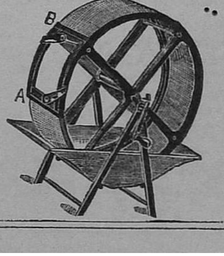
IN our announcement of the result of the August competition, in our last number, we said the winning photograph was sent in by the "Rajah of Bobili." This is an error. The correct title of the gentleman is 'The Kumar Rajah of Bobbili.'

THE 11th International Exhibition of the Photographic Society of India is announced to take place in January next. The Exhibition will be open to

(*a*) Amateurs and professionals of the World; (*b*) Amateurs of the Society.

The Exhibits will be divided into 8 classes : (1) Landscapes, (2) Architecture and Interiors, (3) Portraits and Groups, (4) Genre Pictures and Studies, (5) Photographs of Objects in Motion, (6) Lantern Slides and Transparencies, (7) Photo-mechanical Processes, and (8) Apparatus and Appliances. Thirty medals will be awarded, of which ten will be reserved for amateurs of the Society.

A NEW apparatus for film development has been recently described. Our figures will



give a good idea of the form of the apparatus and how it is intended to be worked. The film is cut and stretched on the rim of the wheel and fastened by clips. The wheel rests on a stand,

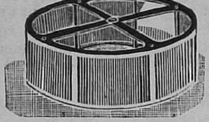


Fig 2.

and under the wheel is placed the dish containing the developer. By turning the crank, the wheel rotates and the film passes through the developer. The dish can be replaced by one containing the fixing bath. The wheel can be removed from the stand and placed in a basin of water for washing, and then put to dry (fig. 2). No doubt the amateur has to be at his wheel during the whole process. Should he, however, fancy that he may be mistaken for a Trans-Himalayan priest turning the cylinders in the dim light of his cloister, he will not find it a very difficult undertaking to make a water-tap do the job. But then, if he be a lover :—

'Neath the orange-tinted glow
Spectral figures come and go
On artistic aims intent;
That the image, Heaven-sent,
May "develop," and so stay,
Relic of a perfect day.

Fragile films, translucent, clear
As the ghost-like shades appear,
Now a form, and now a face,
Picture, this, of perfect grace,
Is your memory keener then,
Than the time-worn thoughts of men?

Yes! And No! Within my heart,
Firmer than by chemic art
Lives a *picture*. Ah! her face
Ne'er shall leave its dwelling-place;
Love's "developer" hath here
"Fixed" the image of my dear.

On my heart-film, see! It glows!
Colors fairer than the rose;
Brighter than dull words can paint:
How they glow and palpitate!
Time, with many and many a day,
Cannot wash one tint away!—(C. Z. Wilbur in the *Photographic Times*.)

One the whole, perhaps, it will be most satisfactory for the amateur to do the work himself.

THE relation between photography and cycling is not at first quite clear. It is true that cycling is as popular (or used to be, until the motor-car upstart came into prominence) and provides an outlet for the energies of amateurs and professionals as much as photography. They have both called forth the latent poetic talents of our generation. Indeed, we have it on the authority of the Rev. C. H. Grundy, M. A. (a member of the Camera Club) that a boy was lately expelled from a public school in England for reciting the following passage on prize day :—

"Friends, Romans, countrymen! lend me your bikes!
I come to borrow cycles, not to buy them.
The *records* that men make live after them,
Tin-tacks are oft interred in their tyres."

Both have reorganised Society. Cycling parties and photographic excursions are among the best recognised of our social institutions; and a "Scorcher" is as much an alarming evil as a "Kodak fiend" is a standing menace to peaceful folk. The connection between the two becomes quite clear when a photographer takes to cycling, or a cyclist to photography. Then arises the question of how to carry the camera on the bicycle. This subject has received some attention of late in the Home journals. A writer in the *Practical Photographer* mentions and criticises the different methods in vogue. One is to carry the weight by means of a spring carrier attached to the handle bar. In this case, however, the balance is disturbed. Another way is to carry the weight in a sack made by fastening a sheet of rubber canvass on a light board and fixed to the cross bar. But there is a limit to the size of the camera in this case—it being inconvenient to carry one larger than ½ plate, and the case, if too large, will rub against the knees. Another way is to have two cases, one for the camera and lens, and the other for the slides, and to have them attached to the handle-bars, so that they can swing freely in every direction. But the best method—the one best calculated to avoid jar and vibration, and to keep the balance undisturbed, seems to be the oldest method, *viz.*, of carrying the weight on your back in a knapsack slung from both shoulders.

The Hon. Secretary will be glad to supply members with bound albums of illustrations which have appeared in the Journal. The albums are cloth bound and contain from 18 to 24 pictures.

Bound albums—6-8 each.

Pictures unbound—5—per doz.

NOTICE.

A Magic Lantern Competition Exhibition will take place on the 2nd of November next. Members wishing to compete are requested to send their "Transparencies" to the Hon. Secretary not later than the 30th October.

Two prizes to the value of Rs. 25 and Rs. 15 will be awarded to the two most popular pictures.

OUR HOME LETTER.

August 1900.

THE talk of the day is the Paris Exhibition, and though as an indication of the present position of photography, the section devoted to the subject is not quite so representative as one might wish, nevertheless if we take into consideration the exhibition as a whole, it will be evident to the observant, that the camera is playing a far more important part in many directions than it did say ten years ago, at the time of the 1889 exhibition. For purposes of illustration, whether by direct photographs or the numerous reproductive processes, there is an enormous increase in the employment of the camera.

Engineers and manufacturers, and indeed producers of every kind of goods, show views of their works or products, and by so doing greatly elucidate matters so far as the purchaser is concerned. Many of the semi-mechanical processes seem to have been considerably developed along special lines by certain firms. Collotypes in colours for the reproduction of old paintings, and half-tones with the addition of coloured tints or as applied to the trichromatic methods are now capable of yielding results immeasurably superior to those of a few years ago. For example, I saw some copies of old masters presumably by a process of collotypy in colours, which, being appropriately framed, and varnished, positively could not be distingushed from the originals excepting by a close examination.

The camera and photograph have joined forces in producing a wonderful instrument which shows you among other things the moving figure of a vocalist, whilst the song is simultaneously communicated to your ears. The apparent reality of the representation is extraordinary. You hear the words distinctly and all the time the "living picture" follows by gesture and auction the spirit of the song. This combined cinematograph and phonograph is naturally a great attraction.

As a field for the amateur photographer, the Paris Exhibition offers splendid opportunities for exceptional subjects. Hand cameras may be employed practically without restriction, and hundreds have availed themselves of the privilege. The beautiful white buildings, the pavilions of foreign countries, the statues and the moving throng present an almost endless variety of scene. It is true that colour plays an important part, and of course the camera loses that. But notwithstanding such a drawback, the amateur photographer will be well advised to visit the Paris Exhibition. He cannot fail to enjoy himself and to profit by what he sees.

Words fail to describe the grandeur and vastness of the Exposition. One cannot but regret its temporary nature, and wish that such a magnificient collection of buildings as those on the banks of the Seine could be permanently retained.

I must leave this subject, and turn to another, the application of photography to the study and presentation of bird life, now becoming a distinct and important use of the camera. There can be no doubt that the appearance and behaviour of many birds have been made known much more clearly and reliably by photography than the drawings of the earlier naturalists, even those of Bewick included, could ever accomplish. In this field the work of the Kearton Bros., R. B. Lodge, and Oliver, G. Pike, has been most systematic and noteworthy. The next point that occurs to me is; Cannot this application of the camera be extended into the realms of nature—the animal world, more particularly? Who will give us a modern "Selborne" illustrated by photographs? The time is ripe for such work, and he who thus unites in himself the abilities of naturalist and photographer will achieve a new work and earn a name in the annals of natural history.

Deaths by poisoning are fortunately rare occurrences in the photographic world, but the recent dark-room fatality which occurred should act as a caution against carelessness in not having bottles properly labelled, or in using them other than for the ordinary manipulations without a most careful examination. It appears that a young man who was developing negatives found the heat oppressive and drank what he took to be lithia water. By mistake, however, he gave himself a fatal dose of potassium cyanide, and death ensued almost immediately. Photographers take this sad occurrence as a warning and label all bottles with scrupulous exactness!

I should like to advise all sun-artists to try and obtain a natural sky in a landscape negative when they can do so. It is much less trouble to print from the same negative than by double printing, and the result is more likely to be true to nature. The way to do is to expose with a cap, when, by judicious management, you can give a longer exposure to the foreground and landscape than to the clouds. Sometimes the devoloper can be kept from the sky, part of the time—in rocking the tray tilt it so that the landscape gets a full benefit and the clouds a wave of solution now and then—just enough to avoid streaks.

And whilst I am writing of these practical matters, may I also give a brief hint about fixing which shall bring this letter to a conclusion. To get through fixing quickly, and yet thoroughly, it is very advantageous to employ two hypo baths, in porcelain dishes, each containing sufficient to nicely cover a plate. The *modus operandi* is to place a plate in No. 1 bath, and after a minute or two there, remove it to No. 2, where the fixing is finished. The first bath removes all developer stains, so that the negatives come out clean and clear.

PERCY LUND.

The Physiological effects of Modern Developers.

(FROM THE GERMAN).

LOOKING back over the enormous spread of photography and, along with it, the extensive use that has been made of developers, I propose to put together the experiences that have been gained with reference to the physiological effects of modern developers. The active agents employed in development, as is well-known, are obtained commercially in the form of colourless powders or small crystals. These substances are, for developing purposes, dissolved in water with the addition of alkalies. The solutions come in contact with the hands and fingers working with them. It is, of course, a rare occurrence for these substances, either as such or in solution, to be taken into the stomach directly. It may, however, be pointed out here that some of the modern developers, *e. g.*, Pyrogallic acid,* must in such cases be regarded as poisons. It must be of great interest to the photographer to know the exact conditions under which alkaline solutions of the developing substances produce injurious effects on the skin—painful inflammations which heal very slowly. Experience has taught that only certain persons possess any marked sensitiveness in this direction. Further, it has been established with certainty that both the alkali contained in the solution, as well as the developer itself, are capable of producing harmful effects. In the majority of known cases, it is the alkali that is concerned; it is only in the case of Metol† that it has been known to cause inflammation in certain cases. It is not immaterial what alkali is contained in the solution. Developers, such as Amidol, which develop their power, with slightly alkaline sodium sulphite, may be regarded as harmless. No case is known in which Amidol has produced inflammation. The injurious effects begin with the employment of the carbonated alkalies—soda, and more especially potash. Indeed, it is an established fact that developers, such as Hydroquinone, which require a very considerable quantity of alkali to develop their power are the most dangerous, while those, such as Eikonogen, or our new Imogen-sulphite, which require only a little alkali, may be regarded as comparatively harmless. The addition of caustic alkalies increases the bad effects of the solutions. We must here distinguish between cases in which the alkali goes to form a Phenolate in the molecule of the developing substance, and others in which the alkali exists as such beside the developing substance. A characteristic example of the first kind is furnished by Rodinal, which requires just that quantity of caustic alkali which is sufficient to convert the Paramidophenol into Phenolate. (*Cf.* the practical methods for Paramidophenol). On this account, the well-known biting sensation is lessened, and the harmful influence of the alkali on the skin reduced to a minimum. The case is quite different if the alkali is not used up in the formation of a salt, as, *e. g.*, in the case of Paraphenylendiamin (Metacarbol). These solutions have the same strongly alkaline re-action and produce the same injurious effects as dilute solutions of the corresponding alkalies. Working for any length of time with these developers cannot be good.

* 2 grammes of Pyrogallic acid killed a dog.

† An unfortunate correspondent writing to *The Amateur Photographer* says that Ortol and Soda acted deleteriously on his fingers. The skin peeled from the fingers three or four times.

OUR ILLUSTRATIONS.

WE are indebted for our illustrations this month to Mrs. L. C. Gompertz and Mr. C. E. Phipps, who send us the following :—

HOLY TRINITY CHURCH.

The Views of the Exterior and Interior of "Holy Trinity" Church at Yercaud, shown in this month's journal, and the pretty little Hill Station to which it belongs, deserve to be better known and appreciated than they generally are. The accessibility of the place from Madras ought to be its chief attraction, as it can be reached in a little more than twelve hours; and when once the short ghaut journey up—of seven miles only—is accomplished, one can scarcely realize the difference there is of climate and of scenery within these few hours. The climate is similar to, but a trifle milder than, that of Coonoor, but it has many advantages over its elder sister,—in its rural simplicity, its fewer inhabitants, and other social conditions. The Church and Parsonage were built by subscription some fifty years ago, and belong absolutely to the congregation. They elect and pay their own clergyman, who also gets Rs. 100 from Government for going down to Salem once a month and officiating in the church there. The present incumbent, the Rev. J. F. Spencer, has been here about 13 years.

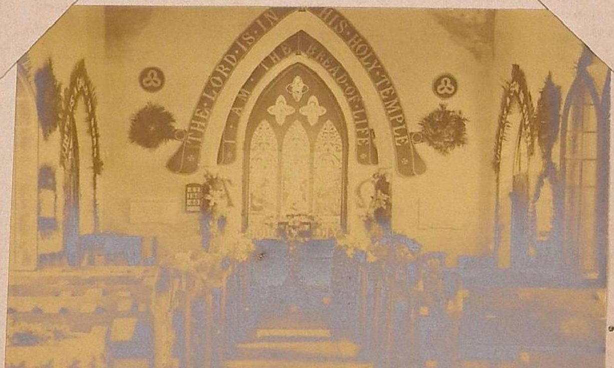
L. C. GOMPERTZ.

COVERED TRELLIS WORK VERANDAH AT "THE PLEASANNCE," SIRUVELLUR.

The negative was taken in December 1899 about 9 o'clock A.M., in bright sunlight with a shew half-plate eclipse camera exposure 30 minutes, stop f. 64, Wratten and Wainwright's ordinary plate. Developer Pyro and Soda. The whole verandah is closed in with creepers and the light consequently very diffused.

C. E. PHIPPS.

Holy Trinity Church. By MRS. GOMPERTZ.



Holy Trinity Church, Interior. By MRS. GOMPERTZ.

Our Contemporaries.

We have no doubt our members would like to know what topics engage the attention of our contemporaries. We give below a list of the articles in our contemporaries which are likely to be of interest to our members. The titles of such articles as have already appeared or will appear shortly in our own Journal are printed in italics.

The Photographic Journal, *July*—
A Simple Method of obtaining the Conjugate Distances of a Lens; The Sensitiveness of Silver and some other Metals to Light.

The Journal of the Camera Club, *August*—
The Diffraction Process of Colour Photography, by Professor R. W. Wood.

The Photogram, *August*—
The Study of a River (illustrated), by Henry Crowther; The Arm in Portraiture (illustrated), by Frank M. Sutcliffe; Hand-work before Printing (illustrated); Photography for the Press; Stereography with the Hand-camera, by Henry Vaux Hopwood.

Der Amateur Photograph, *August*—
Stand-Entwicklung, by E. Blech-Danzig; Neur Apparat Zum Entwickeln von Filmrollen; Ein Lichstarkes Portrait Objectiv von Voigtlander and Sohn; *Physiologische Wirkungen der Modernen Photographischen Entwickler*; Das Tonfixirbad.

The Photographic Times, *July*—
Inferiority of Single Pictures to Stereographs; *Negative making*, by Fayette J. Chute; Enquiry into the Early History of Photography (*continued*); A Few Suggestions, by E. M. Miller; *Notes on Flash-light Photography*, by H. McBean Johnstone.

Journal of the Photographic Society of India, *August*—
The Valley of Cashmere, Part III, by G. P. Symes Scott; Reducing Over-printed Paper Bromides, by Archer Clarke; Practical Lessons in Retouching (*continued*), by A. Locket.

The Photo-Miniature, *June*—
Intensification and Reduction.

The Amateur Photographer, *July—August*—
Photography at the Paris Exhibition (*continued*), by Charles Gravier; *Introduction to Pictorial Photography*, by F. C. Lambert; Exposure and Development, by W. Thomas; Some Notes on Toning, by Thomas Baker; On Chairs, by Frank M. Sutcliffe.

The Optical Magic Lantern Journal, *August*—
None.

The Australian Photographic Journal, *July*—
The Standard of Home Portraiture; To Remedy Over Exposure; Natural History Photography; *A new Reproduction Process, &c.*

The Practical Junior Photographer, *August*—
Homely Subjects; Pets, by Thomas Bell; A Picturesque Village, by Percy Lund; Italian Switzerland, by Ward Muir.

Wilson's Photographic Magazine, *July*—
American Photography; *Taking Care of Lenses*; The Cult of the Godlings, by William Edward Ward; Enlarging by Sunlight and by the Electric Light, by Sir William Abney; Studio Traditions Out of Doors; Retouching, by E. Allers; Copyright in England; About Method; Rapid and Wholesale Development, by W. D. Welford; Plates *vs.* Films, by A. T. Newton; Genre, by George Clarkson; Platinotype Paper; *Telephotography*, by Rev. Frank S. Dobbins; Local Reduction, by F. P. Hammond; The Washing of Prints; Clouds, by Robert Melville; Photogrophy in Warm Climates; Artificial Reflections.

EXTRACTS.

Practical Colour Work for Amateurs.

By A. E. Smith.

PART IV.

The blue picture is easily seen through the coating of gum and yellow-lake, as this pigment is very transparent, so that the print is readily adjusted in the printing-frame in accurate registration under the blue-violet negative from which we are about to print.

The exposure must be found by experience, so much depending upon the nature of the light and the thickness of the coating; but, as a rough guide, it may be mentioned that this will be far less than is the case when making an ordinary print by this process, using an opaque pigment.

It is best to lay the print face down upon a dish of tepid water to develop, which should automatically take place in about half an hour, or less if under-exposed. If development takes place too slowly, and over-exposure is suspected, raise the temperature of the water. On no account attempt any of the tricks resorted to by monochrome workers, such as local brushing away of pigment, etc. Allow the print to develop itself, or the colours in the resulting print will be incorrect. If any assistance is required, a stream of water may be allowed to flow very gently across the surface of the picture. When sufficiently developed, immerse in a ten per cent. solution of alum, to harden the gum and expel all traces of the yellow bichromate of potash, and in this solution the print must remain until all yellowness in the whites has disappeared.

When dry, we resensitise in the bichromate bath as before, dry in the dark, and coat again with gum and pigment, this time using crimson-lake for the colouring matter. This colour is very near the complementary to the fundamental green, and in printing with it we, of course, use the green sensation negative. After development, which is carried out in precisely the same manner as with the yellow print, the picture should be, approximately, a facsimile in colour of the original subject photographed. It is possible, however, that we may have made the blue print too dark, or the yellow too pale, and so on, in which case the print may not be worth keeping, and another must be made.

Owing to the extreme transparency of yellow-lake, it may sometimes happen that, after development, the greens and yellows may appear rather weak. In this case make a second printing in yellow-lake before commencing the crimson. Another disadvantage possessed by this pigment is its lack of permanence. This difficulty may be overcome by dispensing with it altogether, and substituting a more permanent, though opaque, yellow. I have used chrome yellow No. 2 with advantage. It might be supposed that this colour would be too bright, seeing that lemon, or primrose, yellow is the complementary to the primary blue-violet. It, however, loses much of its brilliancy after passing through the gum-bichromate process. Aureolin is another substitute for yellow-lake. It is transparent, and quite permanent, but, unfortunately, very expensive, and extravagant in use.

In working with chrome yellow it will be necessary to print from the blue violet negative *first* upon well-sized paper, and no better for the purpose can be found than that sold by the Autotype Company for carbon work, under

the title of "Matt Surface Single Transfer," especially for large work. It must first be sensitised in the bichromate bath, and dried, then coated in the same way as with yellow-lake; but, as chrome yellow is as opaque as a brick wall, we shall not require to mix so much pigment with the gum. When developed and dried, sensitise the yellow print for the blue impression as follows:—Dissolve 60 grains of ammoniocitrate of iron in 1 ounce of water, and 50 grains of potassium ferricyanide in another ounce of water. For use, mix in equal parts. One dram of each will suffice to coat several quarter-plate prints. The solution should be brushed over the yellow print sparingly with a camel-hair mop, the coating being evened up with the badger softener, and dried as soon as possible. After printing, develop in the manner common to the ferro-prussiate process, namely, by soaking in cold water. When complete, make the third printing in crimson lake by the gum-bichromate process.

I have not considered it necessary to enter into the theory of gum-bichromate printing, as most readers of the *A. P.* are doubtless familiar with it. If not, the AMATEUR PHOTOGRAPHER hand-book, entitled "Photo Aquatint," by A. Maskell and R. Demachy, and published at 1, Creed Lane, E. C., might be usefully consulted. Still, if the instructions given here are closely followed, the process will explain itself.

In printing in the manner just described, it is advisable to use duplicate negatives, and these might just as well be enlarged while we are about it. The reason for this is that in shifting the prints about in the printing-frame to receive registration, the negative films are liable to get rubbed, and so spoil them for lantern slide work.

This objection could, however, be overcome by utilising the carbon process, and it is a matter of surprise to the writer that materials have not ere this been placed upon the market. In case any wealthy amateur is disposed to place a special order for his own use, and as an inducement to some enterprising firm to fill a long-felt want, I will suggest the following process. The materials required are bands of tissue made of the same pigments as used at the present time in the manufacture of printing inks for commercial tri-chromatic work, sheets of transparent celluloid, matt-surfaced opal, or specially prepared waterproof paper coated with hard gelatine.

To make a print, a piece of each of the three tissues is cut to the required size, sensitised in the bichromate of potash solution for three minutes, and squeegeed immediately after removing from the sensitising bath upon separate pieces of the transparent celluloid, which must be thoroughly waxed or rubbed with French chalk on the side brought into contact with the tissue, and allowed to dry in the dark. The three tissues are placed behind their respective negatives to print with the celluloid surface in contact with the negative film, developed from the back, as in ordinary carbon printing, and the pictures allowed to dry upon their temporary celluloid supports. Nothing now remains but to transfer the three prints to opal, or a piece of the waterproof paper, in the following manner:—Soak a piece of the paper in cold water to soften the gelatine, and bring into contact with the yellow print, squeegee, and, when dry, strip off in the usual way from the temporary support. Now immerse, face upwards, in a dish containing 10 ounces of a five per cent. solution of Nelson's No. 1 gelatine, into which 1 ounce of a 10 grain solution of chrome alum has been stirred whilst warm. This must be kept in a warm liquid state while in use. Bring the blue print into contact underneath the surface of the gelatine solution, and carefully work into registration with the print in yellow. Lift both out together, see that the registration is perfect, squeegee lightly, and set up to dry, when strip. Repeat the operation to transfer the crimson print.

This should prove a simple and inexpensive method of printing in colours upon paper. One great advantage it would possess over the gum-bichromate process lies in the fact that the result could be viewed before finally transferring in superposition, as the prints, being upon temporary supports of transparent celluloid, could be laid one upon another on a piece of white paper. If one was found a little too pale in colour, or another too deep, a fresh print could be made, and the triple transfer made only when we were satisfied with the final result, whereas in the gum-bichromate method it is not until the third and last print is superimposed and developed that we know if our print is to be a success or not. Registration, too, would present little difficulty, owing to the fact that the prints could be viewed through the back of their transparent supports during transfer, while unequal expansion of the three prints would be a practical impossibility. I venture to think that materials for such a process, together with a set of light-filters, would form a practical outfit wherewith to make colour photographs on paper with a minimum of trouble.

As with paper prints, to produce transparencies for the lantern, it is necessary to superimpose three prints, from our three negatives, in the primary colours of the artist. Although, up to the present, no materials have been commercially obtainable, various methods have, from time to time, been prominently before the photographic world, notably those of Dr. Selle, J. Wallace Bennetto, and Messrs. Lumiére (from whose London agents tri-chromatic lantern slides may be purchased). Messrs. Sanger Shephard and Co., however, I am given to understand, contemplate supplying them at no distant date, and, as probably these materials will be in the hands of the public by the time this article is in print, I will describe the method of working this process, examples of which were on view at the Royal Society's Exhibition at Pall Mall in September last.

Films of thin, clear celluloid, coated with a soluble silver bromide emulsion, are sensitised in a bath of bichromate of potash, and exposed behind the negatives, with the celluloid surface in contact with the negative film. These are developed in warm water, as in the carbon process, the silver bromide being subsequently dissolved in a bath of hyposulphite of soda, leaving a clear, transparent gelatine image in relief upon a support of thin celluloid. The presence of silver bromide in the film may, to some, appear somewhat superfluous, but, presumably, its function is to prevent the excessive relief common in carbon transparencies. After washing, the gelatine films are stained with aniline dyes of the requisite tints, the celluloid support being, of course, impervious to the staining matter, retaining its colourless transparency. With these colours, it is easier to match the correct shades of red, yellow, and blue than is the case with pigments, therefore slides produced in this manner are more perfect in their reproduction of the original colours than are paper prints. When the three films are properly stained and dried, they are cemented together with a little Canada balsam, and bound up between two lantern cover glasses.

Lacking suitable materials, I have found the following method successful for experimental work; but the results will not be so satisfactory as with the process just described. Three lantern slides are made upon ordinary

lantern plates from each of our three negatives, that from the red sensation negative being kept rather thin. This is soaked for half an hour in a ten per cent. solution of ferricyanide of potassium, and washed in running water for ten minutes, when it is immersed in a five per cent. solution of ferric chloride, and again washed. The colour produced in this way somewhat resembles a cyan-blue. From the other two slides positives are made upon lantern plates, which have been placed in a hypo bath to dissolve out the silver, well washed, and soaked for three minutes in the solution of bichromate of potash used for our gum-bichromate prints on paper, and dried. After exposure to daylight in the manner indicated, which will be about the same as that required for a print on P. O. P. paper, they are soaked in cold water until every trace of yellowness has vanished from the films. The images will appear in relief in proportion to the protection they have received from the light when printing behind the positives. In those parts where the light has been allowed to strike the film through the transparent portions of the lantern slides, the gelatine will have become insoluble, and contain little or no moisture. When placed in baths of dye they will be found to take up the colour in proportion to the moisture held in the gelatine film, and thus a positive from a positive is produced. They must be placed respectively in baths of Judson's yellow and magenta dyes, one penny packet to the ounce. Another method of making the yellow positive is to use an Ilford "Alpha" plate, giving a long exposure, and developing with a weak hydrokinone developer, containing ten to twenty drops of a ten per cent. solution of potassium bromide. The three slides are bound up in superposition, but there will, of course, be a thickness of glass between each film, though this is of not much consequence if the plates are thin. This objection may be averted by substituting Ilford "Empress" films for the lantern plates, and treating them in exactly the same manner with regard to sensitising and dyeing. The celluloid is, however, not so clear as might be desired for this purpose.

In conclusion, I trust that those who have studied the contents of this paper will be induced to take up three-colour photography in one form or another. The difficulties, if any there be, are easily overcome with a little practice and patience, and when once a fair start has been made, and the subject thoroughly grasped, there are but few, I think, who will have any desire to abandon the work.—*The Amateur Photographer.*

Notes on Flash-Light Photography.

BY H. MCBEAN JOHNSTONE.

In cases, owing either to a poor arrangement of light or some other cause that makes it impossible to take a photograph in daylight, the use of magnesium powder has to be resorted to; and again in a great number of instances the use of flash-light will, if properly used, produce some very effective and striking results that cannot be obtained by the use of daylight.

It is hardly necessary to go into details as to what kinds of cameras and lenses should be used. That is done too much, and despite all the good (?) advice, the photographer generally uses whichever one he possesses that he thinks is most suitable. The best kind of flash-lamp (without unduly advertising any particular makes) is one of the style where the powder is blown across the flame of an alochol lamp. This only applies to cases when rooms of ordinary size are being photographed, and where large halls form the subject, the operator should either use a large flash-light machine or if the expense of buying one should happen to be unwarranted owing to its little use, he can very quickly set off any amount of powder by laying it on a strip of gun cotton and setting fire to the cotton. This does not distribute the light well however, and a properly equipped outfit should have a machine attached to it.

A word may be advantageously said on the subject of plates. Always use orthochromatic, not because you are taking flash-lights, but because they should always be used when pictures, not photographs, are required. And having advised the use of orthochromatic plates we are brought face to face with the powder question. The various commercial compounds where magnesium is associated with the usual oxidants, such, for example, as potassium chlorate, permanganate, or pichromate, produce a light rich in violet rays and consequently tend to produce an extremely non-orthochromatic result. Attempts have been made to make such powders more satisfactory in the reproduction of colored originals, by such expedients as the addition of salt of barium, sodium, or copper, but the effect has been to make the flash too slow in combustion and useless for moving objects.

In '94 at a meeting of the Photographic Society of Paris, M. Le Roy, an active member of the Experimental Commission of the Rouen Association, read an interesting communication on a flash-light powder which by its valuable property of yielding a rich light in the yellow and green rays is especially suited for orthochromatic work.

After many experiments, M. Le Roy discovered that by mixing the magnesium with binoxide of barium as an oxidant, a powder was obtained that not only gave the required predominance of yellow and green rays, but also burned with the necessary rapidity. When magnesium and binoxide of barium are mixed together in the proportions indicated in the equation $BaO_2 + Mg + MgO = BaO$, the mixture ignites as readily and burns as rapidly as a mixture containing chlorate, and at the same time is sufficiently stable not to detonate readily when struck with a hammer. It is essential that the binoxide of barium should be anhydrous and the mixture must be kept from the air, or water will be absorbed and the powder will become useless. A good practical mixture is : Magnesium powder, 1 to 1·5; commercial binoxide, 5 parts.

It is somewhat doubtful as to whether flash-light portraits prove a success or not, and this may be left to the operator to decide. In case he attempts it, it is worth remembering that a plain background is much to be preferred and that if it be a dark one, he can have his light as much to the side of the instrument as he likes, without showing any of those obnoxious black shadows so common to this branch of work. In making an exposure in a room it is best to have the light slightly behind and almost in a line with the camera.

Often a manufacturer requires a photograph of the interior of his shop with his men at work, and only those who have attempted to do it by using poor daylight can properly appreciate the benefits to be found in the use of magnesium. Of course, in the case of very large rooms the work becomes difficult, but these do not occur in every day's work.

The general defect that the average flash-light photograph suffers from is underexposure, for though parts may be properly lighted and fairly well exposed, in-

sufficient timing is the most obvious failing. The chances are that there has not been enough powder used and that the light has been badly distributed. In such a case those parts of the room near the source of illumination are properly lighted while the corners more distant are left in semi-darkness so that in the finished print the contrasts between these and the lighter portions are unpleasantly strong. This defect is often much exaggerated by unduly prolonged development, the idea being that such a practice will obtain more detail out of the dark parts. But after a certain stage has been reached, to prolong the development is only harmful as the fully exposed parts become opaque and on printing the high light gradations are not produced unless printing is carried on to such an extent that the thinner parts are cooked brown. In this case it would be much better to stop developing at an earlier stage and trust to masking the thin parts of the negative to improve matters.

The amount of powder used is too often less than is required, and with most flash lamps the waste is generally much greater than is thought, though this is as often due to carelessness, as to the faulty construction of the instruments.

The light for first-class work must be well diffused—this is essential, if we are to avoid the sharp and unpleasantly cast shadows that proclaim the badly made flash-light photograph. Now to get this use double the amount of powder that any book tells you to, and do not forget that if made in the day time the daylight softens the shadows of the brighter flash light. The proper position of the light has already been stated.

Some of the flash-light mixtures are decidedly dangerous, and in cases where a lamp is used and the powder burned in a confined space, this danger is great. It must not be assumed that there is only danger when the magnesium is burned in conjunction with other substances for the writer is aware of a very serious explosion that occurred when the metal alone was burned in a small hand lamp.

To attempt to describe the uses to which flash-light may be successfully put, would indeed be futile. Probably the largest piece of work recently attempted was the photographing of the St. Clair Tunnel by the New York Biograph Co., to be used at the Paris Exposition by the Grand Trunk Railway's Advertising Department.

Doubtless, the Paris Exposition will bring forth some other vagaries in the way of flash-light work.—*The Photographic Times.*

A new Reproduction Process.

The author of this invention, Herr Bierenz, of Vienna, employs, in the reproduction of pictures, photographs, drawings, and also of colour prints, original articles and so on, a specially prepared plate, preferably of metal—such as zinc, copper, or the like—the surface of which is capable of receiving a device, transfer or impression of the drawing, photograph, or the like, which it is intended to reproduce, as it already possesses that grained texture which is requisite for the "decomposition" pattern or design which reproduction necessitates.

The plate which he proposes to employ is produced as follows: After being first polished or smoothed down, it is, by any suitable means, subjected to the action of a sharp blast charged with sand, iron filings or similar bodies, for an adequate length of time, whereby the graining" already mentioned is obtained, which renders the plate capable of receiving the image direct. It may be mentioned in this connection that the resulting fine, though irregular, dotting in the graining of the plate is calculated to prove very beneficial to the effect of the reproduction eventually obtained, and that this advantage becomes manifest also in colour printing, as it enables the possible unsightly effects of a juxtaposition of geometrical figures, into which the design has been divided (by means of stencil plates, squares and the like), in the superposed printing of different shades of colour to be obviated.

The following are the results which the process, involving the employment of the zinc (or other plate), grained as described, enables him to attain:—

1. Any given picture may be reproduced with suitable drawing materials, preferably fat chalk (crayons) or fat Indian ink, and so on, upon a plate direct, so that it is ready for immediate etching, engraving, "rouletting" or photographing, it being important, in regard to these reproductions, that any necessary corrections in the picture, such as effacing, rubbing out or transferring, should be readily feasible. The fixing of a picture thus reproduced, in a manner adapted for printing, may be effected in a manner similarly to that hitherto employed, *viz.*, by sprinkling it with some powdered substance, such as asphalt or the like, resisting the action of acids, and then dipping the plate in a bath prepared with certain acids, washing the same, and so on, until a plate adapted to be printed from is obtained.

2. Direct reproduction, with the assistance of photography, becomes possible, owing to the fact that after the preparation of the grained plate with substances—such as chrome salts or the like—sensitive to the action of light, a picture drawing or other object may be directly photographed; the negative thus obtained may be developed, by the way, by the aid of a prism, even where the picture to be reproduced was, during the exposure, turned down (or inverted). The grained sensitised plate (with gelatine film, which has been treated with chrome salts) is placed into the photographic camera in the same manner as an ordinary glass plate, and is then exposed. It is advantageous to have a strong light for exposing (full sunshine, electric light, or the like). The negative is then taken into the dark room and blackened in with soft or fat colour, treated with water, and the shade portions cleaned from off the fat colour (which adheres to the gelatine which is still soluble) by the aid of wool or the like. Hereupon it is dusted over with fine asphalt powder, and the plate is now ready for burning and etching, by which latter procedure the picture is rendered ready for reproduction.

3. By ths aid of photography the process will prove serviceable in directly preparing positive plates or images, as the decomposition of the photographic picture into variously shaded (dotted, hatched and the like) parts and consequently the employment of transparent, stencil, graining or other similar plates or frames avoided, the picture or the like to be reproduced being taken in the well-known manner as a negative upon a glass plate, the novel feature in this connection being that the negative may be taken even by the dry or gelatine process. The negative plate is then placed upon the grained zinc, or other plate, which has been previously sensitised by being covered with a film of substances sensitive to the action of light, such as chrome salts and the like, the plate being then exposed to the light, whereby upon the grained plate there is obtained positive image, which in

other respects, *viz.*, for purposes of reproduction by printing, may be treated in the manner described in the concluding part of paragraph 1, so as to make it stand out more clearly and fix it more firmly for printing purposes.

4. The method, which consists in employing a grained zinc or other plate, is also suited to the purposes of chromography, the fineness of the graining causing the colouring of the image to apper clearer or purer than it would otherwise be; while in the case of parti-coloured designs or pictures in more than one colour, the superposed colours become better assimilated and are brought out more fully; in adidition to which the several successive photographic views of the picture or object, which have to be taken in this last-mentioned case, may —unless a transfer intended—be conveniently treated by the simplified process above described, and be readily corrected in case of need.

5. Pictures may be transferred by fat printing from one plate—which may be lithographic stone, a heliographic plate or the like—to a plate constructed in accordance with this invention—*Process Review.*

Taking care of Lenses.

There is a good deal of misconception as to the best way of taking care of a lens ; indeed, many photographers seem to consider that a lens needs no special care at all. When it is remembered that we often handle cameras in which four-fifths of the cost is in the lens it well be seen that the lens is, after all, worth thinking about. We get our notions about lenses from what we see of glass. We are used to window cleaning, and to drinking from glasses, and so we get a disregard for glass in general, and a comforting belief that unless it is broken glass it is all right. Some optical glass is much softer than ordinary window glass, which is made specially with a view to hardness. The glass of a lens is softer than much of the dust that settles on it. The dust is fine grit, some of it hard sand which is quite able to cut tiny scratches into the glass.

Fortunately a lens is very easily cared for. All lenses should have some safe wrapper. This may either be a lined case, specially made to fit them, or it may be a little bag of wash leather. I always use a simple bag like a coin bag, with a running tape to draw the mouth tight, but a very serviceable one may be made rather more elaborately. Cut two disks of cardboard just a trifle bigger than your lens mount, and cover these with wash leather. These make the ends of your case. Suppose the barrel of your lens is four inches. Cut a strip of wash leather about four and one half inches broad and long enough to rather more than go round the lens. Sew this strip by the edge to each of the carbboard disks. Sew firmly just half way round the disks, and you have a little box or pocket into which the lens can be dropped. The rest of the strip folds over the lens, forming a cover to the box, and it can be tied by a piece of tape.

It may be that the cement between the elements of the lens (that is, between the different glasses) has got started. If so, I would say send it to your lens man to be fixed. But many do their own fixing, and this is the way: Remove the mount by unscrewing until you have nothing but the glass. Heat this *very* gently, and when it is quite hot, the cement will melt and the glasses can be separated. After they have been cleaned and dried, warm again, and when quite warm put a drop of Canada balsam on to the concave lens. Press the other firmly in contact and when cool the lens is ready for remounting. Remember to use care. Be sure you know exactly how your lens fits together. Don't get the parts turned round, and don't try to mount it the wrong way. To clean the glass use an old handkerchief of fine linen, clean and soft. It may that it is necessary to wash the glass. If so use good soapsuds—preferably from Pears soap. Dry with a soft cloth and then rinse in clean cold water, and again dry carefully with a well-washed, clean cotton or linen cloth.

Dr. A. Miethe recently gave some useful lens information. For properly cleaning optical glass, it is very important that the material used should be free from dust and possessed of other needed qualities, first of which should be the capacity for removing grease. Wash leather, which is sometimes recommended for this purpose, is not adapted to the removal of grease, sometimes even depositing it. In Dr. Miethe's opinion, well-washed cotton cloths are by for the best suited to the purpose, linen especially having the property of removing dirt and grease without scratching. It is, however, in all cases difficult to clean close up to the mount with any such material as above, and for this purpose pith, which is obtained from rushes, elder trees, and sunflowers, is especially well adapted. Short lengths of this pith may easily be obtained, which may be pointed if necessary to reach the smaller crevices. Chalk and rouge are both condemned, as are also alkaline solutions, such as ammonia, caustic soda, caustic potash, and soda or potash, as in the case of the latter they are apt to attack the glass, and repeated use will destroy its surface entirely. The fluids recommended for this purpose by Dr. Miethe are rectified turpentine, absolute alchol, and ether. He advises that the surface should be moistened with the turpentine, rubbed dry with a linen rag, and then polished with ether. Inasmuch, however, as Canada balsam with which the lenses are cemented is dissolved in turpentine, care must be taken to keep an excess of the fluid from the edges of the lenses :—*Wilson's Photographic Magazine.*

Platinotype Toning.

By Prescott Adamson.

[A paper read at the February meeting of the Photographic Society of Philadelphia.]

The fact that black undeveloped platinotype paper can be toned sepia by simple development is probably well known to many workers of this paper. One of the advantages of the carbon process is the fact that any colored; tissue may be used with the same facility. Still, in the platinotype process, many, in fact about all the colors we desire may be obtained by toning. It would make this article too long to take up every possible color, and I have therefore considered only those that will be of general use. These are various shades of sepia, brown and red.

The sepia tone is produced by developing in the bath for the black paper, to which mercuric chloride has been added. The two solutions needed are, first, the usual platinotype developing salt, dissolved in 50 ounces of water and second, a solution of 1 part of bichloride of mercury in 25 parts of water. On account of the varying solubility of this re-agent, it is very inadvisable to use a saturated solution. This is mentioned, as some formulæ have been published giving a saturated solution of this salt, but as it is soluble in 3 parts of boiling water, and in 16 to 19

parts of cold water, you will see that a saturated solution is rather an unknown quantity. It is so with all salts, unless the temperature is given.

One part of this mercury solution is mixed with 8 parts of the developer, and the bath is ready. The print is floated and developed in the regular way, and then placed in a hydrochloric acid bath, made by diluting the usual bath (1 part of acid, s. g. 1·16 to 60 parts of water) with 4 parts of water, making a bath of 1 to 300. On testing the wash waters it was found, after three washings in this strength of acid, all the iron had been removed. Should you wish to test for iron, the ferrocyanide of potassium should be used, for while it is true that light reduces some of the iron to a ferrous salt, yet I found most of it in the ferric state; and the ferrocyanide and not the ferricyanide is the re-agent.

Should an acid bath of the usual strength be taken, it will cause the tone to rapidly fade out. One of the experiments with this toning is shown, the five prints, all printed to the same depth and mounted with the actinometer proofs, being on one card.

The first is developed without mercury; the second with 1 part of the mercury solution to 32 parts platinotype developer; third, 1 part to 18; fourth, 1 part to 12; and fifth, 1 part to 8, this latter being the correct amount.

This experiment is shown, not only for the tones produced, but it indicates how a rather flatly made print, whether overprinted or from other causes, can be made to look well, as the process seems to counteract flatness. This, in itself, is a good point, without regard to the color of the print. You will notice that the first weak additions of the mercury produce a muddy appearance in the prints, but when the proportions are correct this clears up entirely.

The question has been asked, "Is this color permanent?" I think it is. I have one print that has been subjected to daylight for a long time. It was framed and hung near a window for three years, and although the wall paper around the frame shows signs of fading no difference could be seen in the tone of the print.

The question may also be asked, "Why not use the sepia platinotype paper, and not tone?" The effects produced by the two processes are not alike, and we are able to produce any shade, with much less effort by the toning method; and also, if the sepia is not entirely satisfactory, the toning can be continued into a deeper sepia, brown or red, by uranium. Before taking up local toning with mercury we will consider the uranium bath.

This bath is generally used in connection with the mercury toning just described. However, a black print can be toned to a sepia brown or red by simply immersing it in the uranium bath, but the toning is very slow. The prints we have were so toned, and were in the bath for about one hour. They had been black platinotypes, developed some months before the toning took place.

The best way to use this bath is to develop the exposed print in the oxalate developer, to which is added only half the strength of mercury that is used for sepia toning. By this development it acquires a faint sepia, being then well washed in the weak acid bath, and later in water. It is then toned in the following bath:

Ten per cent. Solution Uranium Nitrate	...	2 drachms.
Do. Ferricyanide of Potassium.		do.
Acetic Acid	...	1 drachm.
Water	...	10 ounces.

The tone will go into a deeper sepia and various shades of brown and red. Almost any shade desired can be obtained, this toning being fairly rapid.

I would urge that no one put his hands in these toning solutions. This applies to both the mercury and the uranium baths, for they are both extremely poisonous, and attack the skin. I found that one hand protected with rubber finger-stalls was ample protection, and there is no necessity for these solutions touching the hands.

We now come to local toning. The local toning in itself is very easily accomplished, but when one tries to combine two colors harmoniously it will require, first, that the negative be of such a character as lends itself to two colors, and you will find very careful selection is necessary, for not many do this. This is really the most important point in local toning.

Second, the graduation of the two colors must be well balanced, so they merge one into the other. Try to paint a water color in but two colors, and you will appreciate the difficulty encountered in this work. If the two colors do not harmonize, and good taste is not exercised, the result is entirely without artistic value. But this toning has a future for those who will work at it from an artistic stand-point. One method is as follows: The undeveloped print is covered over entirely with a thin coating of glycerine, well rubbed in, and the surplus removed by a blotter. When the coating of glycerine is perfectly even a brush is dipped in a mixture of equal parts of glycerine and the mercury developer. Almost all of this must be removed from the brush, leaving only sufficient to work with, as there is no way of doing good work with a surplus on the brush. The portions to be toned are brushed carefully until the image appears, at which point it is quickly plunged into the black developer, and all portions, except the brush work, will come up in black. It is well to go over the surface with a wad of cotton, while in the bath, to insure even toning. It is then washed in a weak acid bath, and finally in water. Another method of brush development is to cover over with glycerine all the parts of the print which are to remain black, leaving those parts which are to be toned sepia entirely free from glycerine. The uncovered parts are then filled in with the same mixture as above, the rest of the process being the same as before stated. This tends towards less liability of making errors in the location of the sepia tone, and by having a blotter constantly at hand one can easily prevent the tone extending where not wanted.

Now, it is not necessary that this local application of the mercury developer should produce the correct tone. It is only necessary that it be applied where the tone is needed. Should the tone not be what is wanted, or should it fade in a too strong acid bath, the correct tone can be readily obtained by using the uranium bath. This will not only give the mercury sepia color, but it will also give any deeper shade required. Some of the prints here were left in the acid bath until of an even black all over, but they immediately took the sepia locally when placed in the uranium bath.

The brush used for this mercury toning must not be used when black tones are required.

To produce the local uranium tone, after completing the above work the print is immersed in the uranium bath, and the portions covered with mercury will soon tone to the color desired. Should it be too deep, a weak solution of sodium carbonate will reduce the color, but a little acetic acid should be added to the wash water if soda is used. In fact, as the water is usually alkaline, it is a very good idea to always use a little acetic acid in the washing, for an alkaline water will soon wash out the color.

There is also another way, which, however, can only be used with certain prints; but where it can be used I

think it is one of the most satisfactory means of producing local toning. It refers mostly to portrait work, and might be called selective toning. The negative should have almost clear glass for the blacks, that is, in portrait work the background and drapery should be black.

When a print made from such a negative is immersed in the mercury developer the deep blacks develop black, while the face and any light color appear sepia, thus giving the effect of two colors on one print. The result is really usually more harmonious than that obtained by the glycerine method. Some prints are shown, developed in this manner, both by mercury and by mercury and uranium. The latter tone is obtained by simply placing the mercury toned print in the uranium bath.

You will note that the methods of control differ in the mercury and in the uranium baths. In the former the color is decided by the amount of mercury added, and not by the time of development. In the uranium bath, however, the print remains in the solution until it has acquired the proper tone. I would call attention to the fact that this uranium toning is really an intensification of the print, and produces a stronger effect than the original black tone. Where the print is too weak this is a decided advantage.

Should you wish the mercury tone reduced a strong hydrochloric acid bath will do it; and to remove the uranium tone a weak solution of sodium carbonate is used. Some effects in local toning can be obtained by this latter method.

A word about the effect of reduction on the platinum image may not be out of place. A pure black platinotype, without mercury, can be reduced and intensified repeatedly in the uranium bath, without producing any effect on the reduced platinum in the image. Nitromuriatic acid is probably the only reagent that will affect the platinum image, and it destroys the paper at the same time. But when we combine the mercury with the platinum, and intensify with uranium, the ferrycianide in the bath is converted to ferrocyanide, and it combines with the mercury uranium and platinum to form ferrocyanides of these bases, wherefore the whole image can be removed in a strong alkali. I have cleared off the platinum image entirely by this means, and this is the reason a weak alkali is recommended above.

I feel no diffidence in advocating a process that can be of such use to platinotype workers. Its advantages may be summed up as follows: First, we can change the color of our platinotype to the shade that seems most in keeping with the qualities of the picture. Second, if the color we obtain is not what we wished for, it can be reduced or intensified at our pleasure. Third, we can take a print from a flat negative and develop it to a much stronger looking print than would be obtained in the black. And lastly, we can tone the same print to many shades by purely chemical means, thus placing a power in our hands notavailable in the one-color print.—*Wilson's Photographic Magazine.*

Lantern-slide making for beginners.

By Primrose Hill.

XIV.—TONING (OR COLOURING) SLIDES—(*contd.*)

(80) Our next agent is uranium. And here again we may refer the reader to par 67 in the chapter on intensification. Probably he will have already experimented and found out that this bath gradually changes the colour of the slide from black to sepia, chocolate, brown sienna, and red ochre. By taking the plate out at any stage of colour washing it in slightly acidulated water until the greasy surface-appearance is gone and then drying it, a coloured slide is obtained. We may, however, convert these reddened slides into *greens or blues*, thus:

Ferric chloride (iron perchloride) ...	5 gr.
Water	60-10 oz.

The reddened and washed plate is immersed in this bath, wherein it gradually passes from a warm brown to greenish brown, and finally to a greenish blue, being blue rather than green.

(81) A slightly greener colour is imparted by the use of the following:—

Iron protosulphate	20 gr.
Water	1 oz.
Sulphuric acid	1 drop.

The iron sulphate must be dissolved in cold water.

(82) Our next metal for toning is copper. The following is an old formula:—

(*a*) To a 5 grain per ounce solution of copper sulphate add a 10 per cent. solution of ammonium carbonate until the precipitate at first formed is re-dissolved.

(*b*) Prepare a 20 grain per ounce solution of Potassium ferricyanide.

Of the copper solution (*a*) take	1 oz.
Add of the ferricyanide solution (*b*) ...	3 oz.

This bath tends to give a slight pink stain, which at times is not unpleasant.

(83) Mr. W. B. Ferguson has quite recently published a formula, which, however, has several advantages over that just given. We require ten per cent. solutions of (*a*) potassium neutral citrate, (*b*) of copper sulphate, and (*c*) potassium ferricyanide. To prepare a bath take the following proportions of above solutions:—

(*a*) Potassium citrate, 50 parts, say $6\frac{1}{2}$ oz.
(*b*) Copper sulphate, 7 parts, say 7 drachms.
(*c*) Potassium ferricyanide, 6 parts, say 6 drachms.

Mix in the following order: add (*b*) to (*a*), mix well and then add (*c*).

The slide immersed in this solution turns from black to warm sepia, and on to terra-cotta red. The suitably coloured slide only requires washing. This process gives clear glass, and does not stain the gelatine.

(84) We now pass to certain iron toning methods, which will give us the well-known beautiful iron blue colours. The following is a simple and practical formula:—

A.—Ammonium citrate of iron	4 gr.
Water	1 oz.
B.—Potassium ferricyanide	4 gr.
Water	1 oz.

When dissolved, mix A and B. Then add nitric acid (10 per cent.), 5 drops.

The slide immersed in this solution gradually takes on the well-known prussian-blue colour. It only now requires washing in a gentle stream to clear the whites.

(85) Another iron method is as follows:—The slide is soaked in a 10 grain per ounce solution of iron protosulphate. It is then quickly washed under the tap for a short time. Then immersed in a 10 grain per ounce solution of potassium ferricyanide.

The result is a more or less even stain all over, giving the slide a blue gloss effect. This at times is useful for certain subjects.

Other workers prefer to use a ten grain per ounce of iron perchloride in place of the protosulphate. But the results are practically the same.—*The Amateur Photographer.*

(*To be continued*).

COMPETITIONS.

(*Open only to Members of the Society.*)

SUBJECTS FOR MONTHLY COMPETITIONS.

October ... ... A Group of Europeans.

December ... ... Festivity.

RULES.

1. *Two Special Competitions shall be held, in each year, in addition to a monthly competition.*

2. *The Committee shall select the subjects for the Special Competitions, and notice of the selected subjects shall be announced in the Society's Journal in February and in July of each year. The subject for each monthly competition shall be selected two months in advance by the members present at the monthly meeting, and shall be notified in the next issue of the Society's Journal.*

3. *Pictures, &c., competing for Prizes at the Special Competitions must reach the Secretary by the last day of January and of May, and those competing at the monthly competitions must arrive in time to be shown at the monthly meeting.*

4. *Prizes will consist of Silver and of Bronze Medals, and of Certificates of Merit.*

5. *Not more than one Silver and one Bronze Medal shall be given at each Special Competition, and one Silver and one Bronze Medal may also be given at these competitions for excellence in copying, enlarging, lantern slides, or any other special branch of photography. One Silver and one Bronze Medal shall be awarded half-yearly to the exhibitors who obtain the highest and the next highest marks respectively at the monthly competitions. The number of Certificates of Merit granted at each competition is left to the discretion of the Judges.*

6. *A member may receive only one Silver and one Bronze Medal in the special, and one Silver and one Bronze Medal in the monthly, competitions, held during the same year; but should a member who has been adjudged a medal be disqualified under this rule from receiving it, he shall be given a Special Certificate instead, marked 1st or 2nd Prize.*

7. *A Special Committee of three members shall be appointed Judges by the General Committee to carry out, subject to these Rules, all arrangements connected with the competitions.*

8. *The Special Committee shall be appointed after the Annual General Meeting in January, and shall hold office for one year, and any vacancy occurring will be filled up by the General Committee.*

9. *The Special Committee shall decide upon the merits of the pictures, &c., sent in for competition, and their decision shall be final. The system of judging the monthly exhibits shall be by awarding marks, a record of which shall be kept by the Judges, the marks being totalled and the results declared half-yearly. For this purpose, only the three highest marks awarded at each competition to each competitor shall be recorded, but not the aggregate marks gained by each for a number of exhibits.*

10. *If any member of the Special Committee is a competitor, the General Committee shall appoint a non-competing member to act as Judge at that competition instead of the competing member.*

11. *No exhibit shall compete twice, but pictures, &c., already exhibited elsewhere, may be sent in for the competitions.*

12. *Lantern slides sent in for competition shall be in sets of six, and shall be judged upon the screen.*

13. *The Special Committee shall not award any Prizes or Certificates, unless they consider the exhibits to be worthy of such distinction.*

14. *Each competing exhibit shall be the entire work of the exhibitor, and when sent in shall be accompanied by a Certificate in the annexed form:—*

> *"The (1) Arranging, (2) Exposing, (3) Developing, (4) Retouching (if any), (5) Printing and (6) Trimming and Mounting were done by me without assistance."*
>
> ________________________
>
> *Member, A. P. Socy. of Madras.*

15. *All pictures for the Special Competitions shall be mounted, and may, at the competitor's option, be framed but not glazed. Those for the monthly competitions need not be mounted, but should be trimmed.*

16. *Each competing picture should have a name or title, which should indicate the nature of the subject.*

17. *No competitor shall be allowed to send in more than six pictures to compete for any particular Prize, but the same member may compete in all branches specified in Rule 5.*

18. *The pictures gaining 1st and 2nd Prizes at the half-yearly competitions, and the best pictures sent for the monthly competitions, shall, when practicable, be reproduced in the Society's Journal.*

19. *To give up-country members an opportunity of seeing the competing pictures at the special competitions, the pictures shall be circulated to all members of the Society, not residing in Madras, who apply to see them. As this arrangement can only be carried out by the cordial co-operation of the members themselves, they are expected to forward the pictures without delay to the next member, and to send one of the accompanying post-cards to the Secretary, so that by this means the progress of the pictures may be traced.*

List of Members whose Dark Rooms are available for use by Members of the Madras Amateur Photographic Society.

E. MAENNIG, Buckingham House, Tranquebar.

FOR SALE.

1 *New* Half-plate Ross-Goerz Double Anastigmat Lens, the latest pattern working at f/6·8, iris diaphragms, cap, pull-off morocco leather case, 2 flanges. Nett cost in London over £ 7-10-0. Offered to sell readily at Rs. 100 only.

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H. H. THE KUMAR RAJAH OF BOBBILI,
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NOTICES.

Members of the Madras Amateur Photographic Society are permitted to use this column free of charge for two insertions of each advertisement—all subsequent insertions of the same being chargeable at 2 annas a line. When an advertisement becomes liable to this charge, it will not be inserted unless a postal order or stamps to the value of the charge are previously sent, addressed to Graves, Cookson and Co., Scottish Press, Broadway, Madras. Advertisements received up to the 5th of each month will be inserted in the next issue of the Journal; those received after this date will be held over for the subsequent issue.

Subscribers, and others who are not regular dealers may make use of this column for advertisements by paying at the rate of 3 annas a line.

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N.B.—The Journal is issued on the 15th of each month, and is posted free to members of the Madras Amateur Photographic Society.

Entrance Fee, Rs. 5.—Annual Subscription *for Resident Members, Rs. 15; for Up-country Members, Rs. 12. Members joining after 30th June pay Half-year's Subscription.*

Candidates for Election—*should be proposed by one member and seconded by another; and they will be ballotted for at the following meeting.*

Ordinary Meetings—*of the Society are held on the first Friday of each month at 6 p.m. and members are at liberty to introduce visitors: meetings take place at the Museum, Egmore.*

Letters to the Editor—*should be addressed care of Messrs. Graves, Cookson & Co., Scottish Press, Broadway, Madras.*

Letters to the Honorary Secretary—*should be addressed to Mrs. Leet Palk, Locock's Garden, Kilpauk, Madras.*

Letters to the Honorary Treasurer—*should be addressed to A. E. Lawson, Madras Mail Office, Madras.*

Communications regarding the issue of the Journal—*should be addressed to the Publishers, as above.*

Temples of Tadpatri 1. By Mr. E. W. STONEY.